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This report summarizes a national, invitational seminar to identify and encourage priority research in trade and industrial teacher education and certification. Fifteen nationally recognized leaders in trade and industrial education and three observers from other vocational services met to review relevant research completed to identify and list critical research problems, and to prepare mini-proposals for high priority studies. Papers presented during the conference are incorporated in their entirety: (1) "Trade and Industrial Education Research in Teacher Education and Certification Since 1963" by George L. Brandon, (2) "Basic Certification Requirements for Trade and Industrial Education Teachers" by Bernard T. Fagan, and (3) "Mini-Proposal Format" by Durwin Hanson. Titles of the four mini-proposals developed are: (1) What Professional Competencies are Needed for Successful Teaching, (2) A Model for the Measurement of Occupational Competency, (3) What Might Be the Most Desirable Preservice Experiences for New Teachers?, and (4) Relationship of Occupational Competency to Student Achievement. (MM)

TRADE and INDUSTRIAL TEACHER EDUCATION and CERTIFICATION:

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RESEARCH 17

TRADE AND INDUSTRIAL TEACHER EDUCATION AND CERTIFICATION:

REPORT OF A NATIONAL INVITATIONAL RESEARCH DEVELOPMENT SEMINAR

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Co-Sponsored by

THE CENTER FOR RESEARCH AND LEADERSHIP DEVELOPMENT IN VOCATIONAL AND TECHNICAL EDUCATION, THE OHIO STATE UNIVERSITY, COLUMBUS.

and

THE CENTER FOR OCCUPATIONAL EDUCATION, NORTH CAROLINA STATE UNIVERSITY, RALEIGH.

November, 1968

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The Center for Vocational and Technical Education has been established as an independent unit on The Ohio State University campus with a grant from the Division of Adult and Vocational Research, U. S. Office of Education. It serves a catalytic role in establishing a consortium to focus on relevant problems in vocational and technical education. The Center is comprehensive in its commitment and responsibility, multidisciplinary in its approach, and interinstitutional in its program.

The major objectives of The Center follow:

1. To provide continuing reappraisal of the role and function of vocational and technical education in our democratic society;

2. To stimulate and strengthen state, regional, and national programs of applied research and development directed toward the solution of pressing problems in vocational and technical education;

3. To encourage the development of research to improve vocational and technical education in institutions of higher education and other appropriate settings;

4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and inservice education program;

6. To provide a national information retrieval, storage, and dissemination system for vocational and technical education linked with the Educational Resources Information Center located in the U. S. Office of Education.

PREFACE

In consideration of the unique problems manifested in the preparation and certification of trade and industrial teachers, The Center for Vocational and Technical Education and The Center for Occupational Education, North Carolina State University, sponsored in cooperation with the American Vocational Association Trade and Industrial Research Committee a National Invitational Research and Development Seminar on Trade and Industrial Teacher Education and Certification. This seminar was held at The Ohio State University October 9-11, 1967. It was designed to identify and describe priority research problems and to encourage research and development activities in that area. We trust that you will find this report of assistance in planning similar conferences and that the potential research problems cited and described will be helpful in initiating research in your institution or agency.

We would like to recognize the contributions of the AVA Trade and Industrial Research Committee and the work of Dr. Robert M. Reese, professor and chairman of the Academic Faculty for Vocational and Technical Education at The Ohio State University, for serving as chairman of the seminar. The seminar planning committee consisted of Dr. Carl Schaefer, professor and chairman, Department of Vocational and Technical Education, Rutgers--The State University; Dr. Durwin Hanson, professor and head, Department of Industrial Education, North Carolina State University; Dr. Ralph Wenrich, professor and director, Vocational Education, University of Michigan. Also included were Dr. Calvin J. Cotrell, specialist in trade and industrial education, The Center for Vocational and Technical Education, The Ohio State University, and Dr. Charles Rogers, coordinator of services and conferences, Center for Occupational Education, North Carolina State University, who served as coordinators for the two sponsoring centers.

We also are indebted to Dr. Calvin J. Cotrell, Dr. Carl J. Schaefer, and Dr. E. J. Morrison, coordinator of research, The Center for Vocational and Technical Education, The Ohio State University, for their editorial review of this report.

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FOREWORD

In the summer of 1967, the Research Committee of the American Vocational Association's Trade and Industrial Division recommended that a select group of some twelve to fifteen persons actively involved in vocational trade and industrial teacher education be brought together for a special research development seminar on trade and industrial teacher education and certification. Support for the project was made available through the cooperative assistance of The Center for Vocational and Technical Education at the Ohio State University, and The Center for Occupational Education, North Carolina State University.

The seminar planning was completed by a telephone conference with Carl Schaefer, New Jersey; Charles Rogers and Durwin Hanson, North Carolina; Ralph Wenrich, Michigan; Calvin Cotrell, Ohio; and with Robert Reese of Ohio serving as planning chairman. The planning committee suggested a number of persons to participate in the invitational seminar and scheduled the event for October 9, 10, and 11, 1967 in Columbus, Ohio. It was proposed that the seminar participants share with each other information regarding the current status of existing research in the field. In addition, it was proposed that priority research areas be identified, and that "mini-proposals" be developed for those research problems having the highest priority. It was anticipated that seminar participants would accept individual responsibility for pursuing certain priority research projects identified at the seminar. This report provides a summary of this seminar to members of the Trade and Industrial Research Committee, seminar participants, teacher educators, and state supervisors of trade and industrial education.

Special recognition and acknowledgement is given to George L. Brandon of The Pennsylvania State University and Bernard Fagan of The University of Kentucky for accepting the responsibility of preparing and presenting papers at the seminar, and to Durwin Hanson for providing a research design format.

Robert M. Reese
Seminar Director

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SUMMARY

A national, invitational seminar to identify and encourage priority research in trade and industrial teacher education and certification was sponsored by The Center for Research and Leadership Development in Vocational and Technical Education (The Ohio State University) and The Center for Occupational Education (North Carolina State University). Fifteen nationally recognized leaders in trade and industrial education and three observers from other vocational services met in Columbus, Ohio on October 9-11, 1967 to review relevant research completed, to identify and list critical research problems, and to prepare mini-proposals for high priority studies.

This report summarizes the seminar activities, lists priority research problems in teacher education and in teacher certification, and presents conclusions and recommendations of the seminar. Three papers presented during the conference are incorporated here in their entirety: "Trade and industrial education research in teacher education and certification since 1963" by George L. Brandon, "The basic certification requirements for trade and industrial education teachers" by Bernard T. Fagan, and "Mini-proposal format" by Durwin Hanson. Four mini-proposals developed during the seminar are included in the appendix.

TRADE AND INDUSTRIAL TEACHER EDUCATION AND CERTIFICATION:

REPORT OF A NATIONAL INVITATIONAL RESEARCH DEVELOPMENT SEMINAR

I

SEMINAR SUMMARY

TEACHER EDUCATION RESEARCH--A REVIEW

Since this research seminar was planned on very short notice and materials could not be forwarded to participants in advance of their arrival, one individual was asked to accept the responsibility for providing a report on research in trade and industrial teacher education since 1963. George L. Brandon of Pennsylvania State University and his staff accepted this responsibility and Dr. Brandon, on the first morning, provided the report (see Chapter II) which set the stage for subsequent discussions on teacher education research programs.

The Brandon report resulted from review of material available in The Pennsylvania State University's library, from many professional education journals, from several research coordinating units, from the Educational Resources Information Center clearinghouse for publications in vocational-technical education, and from several universities. Contact also was made with the U. S. Office of Education, Division of Vocational and Technical Education for assistance. Due to the limitations of time and the availability of desired reports, much of this report was dependent upon previous reviews by Moss (1967) and by Schaefer and Tuckman (1966).

It was found that a number of the research reports cited had been conducted by students as part of a doctoral program and, although recent increases have been made in federal funding, little improved sophistication was found in research directed specifically toward trade and industrial teacher education. The majority of studies cited were concerned with either the teacher education process or the teacher education product. In only a few cases were attempts made to link a teacher's development and his eventual teaching performance. Dr. Brandon drew two major conclusions from his review:

1. "Very few of the studies cited seemed to grow out of a theoretical framework. Too few attempts have been made to build on the previous work of other researchers or to fit individual pieces of research into a greater montage. The work of the philosopher is not contrary to that of the researcher and the best ideas of both should meet in the planning of research studies."

2. "It can be concluded that research in trade and industrial education is still in the embryonic state. This is indicated by the volume of social bookkeeping research and the shortage of research designed to open new vistas of education. Social bookkeeping research will always be needed. We have to know where we are

> in order to establish direction and thrust, but an excessive portion of our present research is concerned with where we are. Only on the basis of this type of research, however, can meaningful studies be produced."

Dr. Brandon spoke at length about the need for a frame of reference or a model for organized research in the field of vocational trade and industrial teacher education. He quoted both Moss (1966) and Barlow (1966) as further evidence of current interest in developing coordinated efforts in research.

The participants in the seminar appeared to agree that a pattern for research must be organized and coordinated throughout the country to the end that each piece of research would be a part of and contribute to a total understanding of the program of research. Several of the special characteristics of those who are served by trade and industrial teacher education programs were also touched on by Dr. Brandon. A major factor contributing unique problems to the education and certification of trade and industrial teachers is the usual practice of recruiting from the ranks of older individuals who have a number of years of skilled or technical occupational experience and who, for a variety of reasons, want to change occupations. Brandon closed by presenting a series of research alternatives to which the group could give attention in their deliberations.

TEACHER CERTIFICATION PRACTICES

Following Brandon's challenging review of research in teacher education, Bernard Fagan of the University of Kentucky presented a short review of the basic certification requirements for vocational day-trade teachers in the United States. A short questionnaire had been rushed by Mr. Fagan to 72 head teacher educators located in 50 states plus the District of Columbia, Puerto Rico and the Virgin Islands. Fifty-seven responses were received from 46 different states.

It was found that every state responding had a program of teacher education for trade and industrial teachers. The extent of these programs varied, however, from states providing minimum teacher education, without college credit, directly out of the state office to some 40 states offering multiple programs usually by more than a single institution within the state. Twenty-nine states indicated teacher education was carried on by contract between the state vocational education office and various colleges and universities within the state. Twenty-eight states reported formal classes on college university campuses, while 35 responses indicated classes were held on an extension basis but taught by the college or university faculty. Thirteen states reported that a teacher educator was employed on the state staff with no college credit being granted for the work completed. Most of the extension classes were offered during the academic year and most resident classes were offered during the summer.

A question on general education requirements for teachers found that 37 states of the 45 responding have high school

graduation as a minimum requirement. Three states require less than high school graduation, while five states require more than a high school diploma. Mr. Fagan found in his inquiry concerning preparatory training of teachers that 36 states would place an occupationally competent person in a teaching situation prior to any professional teacher education. Five states required from 2 to 6 semester hours credit prior to entering, while four states required 12 to 15 semester hours before teachers may be placed in the shop or classroom. Seven states reported that all teachers were provided from 12 to 40 clock hours of teacher education preceding their placement of the teacher with students.

Another question was related to the period of time that the initial teaching certificate was valid. Forty-five states responded to this question; all require a teaching certificate or credential. In twenty-nine states the original preliminary certificate is valid for one year. Five give a two-year certificate, while 11 reported that their first vocational certificate was issued for three or more years. It was found, further, that even a greater range of differences existed in terms of the amount of teacher training required for a renewal of certificates. Many states required almost no teacher education for a renewal, while others required up to 30 semester hours. In some states, it was found that a permanent certificate could not be obtained until the individual had completed a baccalaureate degree. In others a teacher completing a wide range of from nine to over 60 semester hours could receive permanent certification. Approximately 50 percent of the teacher educators contacted expressed moderate satisfaction with the present entrance requirements for trade and industrial teachers. However, more than half of these same teacher educators were dissatisfied with the program of teacher education as it now exists.

Following his review of teacher certification requirements, Mr. Fagan presented a series of challenging questions to the seminar participants for consideration in developing research problems in teacher education and certification.

Following the reviews of teacher education and basic certification requirements, the conference began to work on the second facet of the recommended agenda, namely, to identify certain areas or problems in trade and industrial teacher education and certification needing research. Following are the lists of problems developed by the group.

Research Areas in Teacher Education

1. What are the minimum subject matter (occupational competency) skills required by a trade and industrial teacher?

2. How can one identify and measure the occupational competency of trade and industrial teachers?

3. What are the best methods to utilize in helping teachers acquire the minimum competencies necessary?

4. How, on the basis of the student level to be taught, can the competencies of the trade and industrial teachers be determined?

5. What is the relationship of teacher subject matter competency (occupational competency) to student achievement?

6. How can occupational competency be maintained in vocational teachers?

7. What is the relationship of a teachers's subject matter competency to teacher behavior.

8. Is there a relationship between a vocational teacher's views of his occupation and student achievement?

9. What procedures are feasible for determining occupational competency of trade and industrial teachers?

10. What means can be used to obtain acceptance of occupational competence by colleges and certificate divisions of state departments of education?

11. What characteristics are evident in teachers who inspire students to continue self development in the teacher's vocation?

12. What are the professional competencies needed for successful teaching?

13. How can these professional competencies needed for successful teaching be developed?

14. What are the most desirable pre-service experiences for new teachers?

15. What kinds of experiences may be provided after full certification which will be of maximum benefit to teachers and to trade and industrial education programs?

16. How can VICA be used most effectively in identifying potential teachers?

17. At what point in the total teacher education pattern can professional education courses be most effectively taught?

18. What will be the role of the vocational trade and industrial teacher in the future?

19. Is there any relationship between expenditures for teacher education and success of the teacher?

20. How can the proper location, organization and sequence of teacher education units be best determined?

21. How can professional competencies be evaluated by examination in lieu of credit courses?

Research Areas in Teacher Certification

1. How can flexibility of certification be maintained without loss of uniform standards?

2. How can certification be related to the basic aims, goals and objectives of trade and industrial education?

3. What is the appropriateness, if any, of personality evaluation as a part of certification standards?

4. Is there a need for different levels of certification for trade and industrial teaching?

5. What are the possible alternate routes to certification?

6. How are legislative and other pressures used in certification?

7. How can regulations be established that will be applied in all cases for certification?

8. What types of occupational experiences should be considered for certification purposes?

9. Should different certification standards be applied to cooperative teachers versus day-trade teachers or comprehensive high school teachers versus special vocational school teachers?

10. What certificate period of time is most appropriate for beginning teachers?

11. How can reciprocity between states be attained in certification? If so, on what basis might this be accomplished?

12. To what extent are present standards appropriate to teaching in current situations?

13. What teacher education standards will industrial employers and labor leaders support?

14. To what extent do present day standards give reasonable assurance of occupational competency and professionable efficiency in teachers?

15. Who and where should decisions be made affecting certification standards?

16. What standards are really amenable to measurement?

17. What criteria should be used in determining initial certification?

18. What agencies, institutions, etc., should be involved in setting standards for teacher certification in trade and industrial education?

19. What knowledge is needed by trade and industrial teachers other than occupational competency which can be attained only through work experience?

20. What evidence is there that a college degree makes a better trade and industrial teacher?

MINI-PROPOSAL DEVELOPMENT

Following the identification of these researchable problems--problems that need attention in trade and industrial teacher education and certification--Durwin Hanson presented a suggested format for use during the balance of the sessions in preparing mini-proposals for selected topics (see Chapter IV).

The seminar then selected the following problems for which mini-proposals were developed during the balance of the session by four working subgroups.

- A model for the measurement of occupational competency
- The relationship of occupational competency to student achievement
- What might be the most desirable pre-service experience for new teachers
- What professional competencies are needed for successful teaching

Each of the mini-proposals developed is presented in Appendix A of this report.

Conclusions

The following represent the major conclusions of the seminar:

1. A large number of research problems are identified in trade and industrial teacher education and certification.

2. There is a need to develop a model for attacking the vocational and technical teacher education research problems. It would appear that there is justification for a nationally coordinated effort.

3. For similar meetings in the future, there is a need to involve researchers who are ready to go to work on a particular research problem. It would appear that it is not advisable to generate research proposals and expect other researchers to be motivated to do the research.

4. Researchers from vocational services other than trade and industrial education can be very helpful to research planning in trade and industrial education. It was found that a great deal of commonality in problems exists from one service area to another. Involvement of researchers from other service areas helps to improve communication among the vocational services.

5. The experience of those attending the seminar indicates that teacher competency examinations need further development and improvement or that a suitable substitute must be developed.

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II

TRADE AND INDUSTRIAL EDUCATION RESEARCH IN TEACHER EDUCATION AND CERTIFICATION SINCE 1963

David C. Bjorkquist, George L. Brandon, Curtis R. Finch, Joseph T. Impellitteri, Samuel R. Wiersteiner[1]

This paper is presented upon invitation. The research staff of the Department of Vocational Education, The Pennsylvania State University, welcomes the opportunity to participate and share the results of its informal investigation, however brief, with the conference. In looking into the literature which reflects the progress and achievements of research over the extremely limited span of years since 1963, the staff hopes that it has uncovered the salient accomplishments of these dramatic four or five years of research. Most optimistically and enthusiastically, the staff wishes for the conference and its participants a new and fresh insight into the direction which research could take and the purposes which it could serve. Despite limitations of time and resources, the opportunity to make this informal survey has been a catalyst to a further refinement of our own staff position for the direction of research in teacher education in our own department. May the October conference experience provide a similar visibility for its participants in trade and industrial education--individually and collectively.

PURPOSE OF THIS PAPER

This paper does not reflect exhaustive treatment of published and unpublished literature. It attempts to summarize research in trade and industrial education (excluding technical education) related intimately to teacher education and certification since 1963. No attempt is made to abstract, annotate, or interpret research results. Consequently this report will indicate the characteristics and general nature of the research, and to a limited degree, the amount of research activity. Of far greater significance to teacher education and research about it, the paper hopefully delineates a position which research may take, a springboard from which a departure may be initiated, and a framework upon which to shape a continuing program.

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[1]David C. Bjorkquist, assistant professor; George L. Brandon, professor and head; Curtis R. Finch, instructor; Joseph T. Impellitteri, assistant professor; Samuel R. Wiersteiner, assistant professor, Department of Vocational Education, The Pennsylvania State University.

ORGANIZATION OF THE PAPER

In the first section, Samuel Wiersteiner summarizes our efforts at review, retrieval, and procurement of research results. This stage could be termed "BE--before ERIC;" pay dirt is hard to come by, and retrieval in old-fashioned library research and newfangled retrieval is troublesome.

Section II reports, in our collective opinion, a solid bibliography of research reports upon which the conference may build. David Bjorkquist consolidates this section in respect to a few well chosen criteria, at least for the purposes of the report.

Curtis Finch and Joseph Impellitteri present Section III with 1) specialization in the construction of a model, and 2) a determination of a position, respectively. To be more precise, Finch and Impellitteri synthesize our collective viewpoints, an impossible and thankless task from the outset. Nonetheless, we have agreed and strongly support the position, more so we intend to implement it.

A fourth section, resource bibliography, will pass on a few selected resources to the conference.

As a privileged interlocutor in presenting the paper to the conference for discussion, I am indebted for the interest and efforts of The Pennsylvania State University staff and to others who contribute information and suggestions to us.

I. LITERATURE SEARCH IN TRADE AND INDUSTRIAL TEACHER EDUCATION RESEARCH

The collection of reference material for this report was conducted by the staff of the research division of the Vocational Education Department, The Pennsylvania State University.

Searches for material were conducted at The Pennsylvania State University library and through the many professional educational journals. Requests for materials were sent to several regional Research Coordinating Units, the ERIC Clearinghouse on Vocational and Technical Education, and several selected universities. Additional aid was rendered by Mr. Otto Legg and Mr. Lawrence Braaten of the U. S. Office of Education.

Due to the lack of time and the paucity of information in regular dissemination channels, this search was very much dependent on reviews that had been completed by Moss, Schaefer and Tuckman. A bibliography of research completed by the Research Coordinating Units (compiled by the Center for Studies in Vocational and Technical Education at The University of Wisconsin) was consulted. This bibliography led to the seeking of reports from several RCU's but to date has been almost fruitless.

The lack of dissemination of research reports was a decided hindrance to the progress of this literature search. The research staff is of the opinion that this lack is due, in part, to the relatively short time that ERIC and the various RCU's have been in

operation. The research staff received very little in way of materials from the RCU's or from ERIC. However, a great deal of aid was received from several individuals at these agencies who recommended possible sources of the requested reports.

It was the consensus of the members of the staff that, while the basic concept of these agencies is laudable, at the present time they have only added to the number of places where one must look when conducting a literature search.

In securing much of the material presented here, the staff relied heavily on the esprit de corps which exists among vocational educators. Personal contact with various individuals did much to expedite the literature search and, at least for the present, seems to be the most efficient way to gather research material.

II. REVIEW OF TRADE AND INDUSTRIAL TEACHER EDUCATION RESEARCH

Since several comprehensive reviews of research in vocational education, including trade and industrial teacher education, have been completed recently (notably those by Schaefer and Tuckman and Moss) the purpose of this bibliography was to identify recent research in the rather exclusive domain of trade and industrial teacher education. In so doing it is hoped that we might better be able to evaluate the efforts of researchers in this area and examine the present state of the art.

Three criteria were applied to research reports in order to determine whether they should be included in this bibliography. The reviewer must take the responsibility for the application of these criteria and must recognize that few reviewers would agree on the contents of this bibliography.

Only research studies completed in 1963 or more recently were included. Classified as research were systematic studies which added to the body of knowledge in trade and industrial teacher education. Severally excluded were articles, speeches and reports of symposiums, and conferences.

Secondly, only studies directly concerned with teacher education were included in this bibliography. Admittedly, studies of how students learn or of new teaching techniques contribute to the body of knowledge in teacher education, but for the purposes of this review, only those studies considered to be directly concerned with teacher education were included.

The third criterion was that the study must have been in trade and industrial education or have included trade and industrial education. Some studies were concerned entirely with trade and industrial education problems while in others, trade and industrial education was included with industrial arts or with other vocational subjects.

The selected bibliography contains thirty-five references.

Based upon the studies included in the bibliography, some general conclusions may be made:

1. A sizable number of the research reports cited (7, or 20%) have been conducted by students as part of a doctoral program.

2. Recent increases in federal funding have not seemed to greatly improve the sophistication of research directed specifically toward trade and industrial teacher education.

3. The majority of the studies cited were concerned with either the teacher education "process" or the teacher education "product."

In only a very few cases were attempts made to investigate the linkages between a teacher's development and his eventual teaching performance.

Two conclusions based on this review are worthy of deep consideration.

First, very few of the studies cited seem to have grown out of a theoretical framework. Too few attempts have been made to build on the previous work of other researchers or to fit a piece of research into a greater montage. The work of the philosopher is not contrary to that of the researcher and the best ideas of both should meet in the planning of research studies.

Secondly, it can be concluded that research in trade and industrial teacher education is still in an embryonic state. This is indicated by the volume of "social bookkeeping" research and the shortage of research designed to open new vistas of education. Social bookkeeping research will always be needed. On the basis of this research meaningful studies can be produced. We have to know where we are in order to establish direction and thrust, but an excessive proportion of our present research is concerned with where we are.

III. TOWARD A FRAMEWORK FOR RESEARCH IN TRADE AND INDUSTRIAL TEACHER EDUCATION

Without imposing some meaningful frame of reference on the findings, the current status of research in trade and industrial teacher education cannot be evaluated even after an exhaustive search of the published and unpublished literature. Whether we can describe current research efforts as being "too little," "generally unsophisticated," "haphazard," or "overly scientific" depends upon the function which research is perceived as serving in the field. Those who perceive the role of research in trade and industrial teacher education as being solely to solve a variety of procedural problems encountered by the teacher educator may be rather pleased with research conducted to date. Others who have a strong philosophical frame of reference may claim that the research efforts are too greatly influenced by the scientific method.

Because of this imposing of a personalized frame of reference it is likely that in any group of trade and industrial teacher educators the consensus concerning research in the field would be

that "there just isn't enough of it." This is not meant to be a criticism of trade and industrial teacher education, but merely a description of the consequences of imposing a totally personalized frame of reference in evaluating the contributions of research to the field. It is not unlikely that research being conducted at Penn State enjoys little appreciation from teacher educators in Wisconsin. In fact, it may well be that research being conducted by a teacher educator at Penn State may not be appreciated by other members of the teacher education staff of the same institution.

Perhaps the question to be posed before we ask "What research shall we conduct?" is "Why conduct research in the field of trade and industrial teacher education?" If and when there exists some agreement to the "why" question, the "what" question is more easily attacked. Furthermore, the evaluation of the answer of the "what" question becomes possible to accomplish.

In a recent review of research in the broader field of vocational-technical teacher education Moss (1967) imposes his own frame of reference in summarizing the research which has been conducted:

> . . . with some exceptions, of course, little has been done which materially contributes to the development of a science of teacher education. We need a system of verified principles which will permit us to understand and control the teacher education process. At present, we are still operating programs on the basis of tradition, "convention wisdom," and personal experience.

Barlow (1966) in a recent presentation at a research planning conference in trade and industrial teacher education has suggested that:

> We must begin immediately, through a coordinating group of trade and industrial teacher educators, to assign research projects to every institution maintaining a concern for research and having a teacher education responsibility. Many teacher educators must have a part in the research in teacher education, but the parts must fit together.

In recommending the assignment of research projects to institutions, Barlow has proposed a way of coordinating research efforts in trade and industrial teacher education. But he does not address himself to the problem of the frame of reference upon which the system of coordination must depend. The activity of coordination presupposes the prior establishment of an adequate frame of reference. It cannot be assumed that all "significant" problems can be attacked at once, with or without coordination of efforts.

At this point it may be profitable to dwell briefly upon the description of the "frame of reference" to which this paper has made frequent reference. What is <u>not</u> meant by this phrase is a list of priorities or any other type of hierarchical design. What <u>is</u> meant is the paradigm, model, structure, or framework (choose your favorite term) which sets the pattern for research, which

when carried out may lead to the development of theory. Commitment to a frame of reference implies a commitment to a descriptive setting and system of processes in which the research is to be conducted. Unless such a framework is developed in trade and industrial teacher education as well as being widely accepted, there can be no attention focused on crucial issues such as: "What justification is there for attacking this particular problem as opposed to that particular problem in the field?" "What research problems do we have in common with other teacher education fields, vocational and academic?" or "What implications do research findings in sociology, psychology, or economics have in our field?" Without adopting some frame of reference there can be no agreement upon the solutions to these issues.

The Paradox of the Field: Uniqueness and Commonality

In at least one aspect trade and industrial teacher education is in an enviable position to attack certain research problems. One issue often raised is whether a person would do as good a job of teaching if he were not to have had the professional education courses, general education courses, and other required college courses. In all other teacher education fields it would be relatively impossible to attack this type of problem. In our field we do have persons currently teaching with many levels and types of educational preparation and thus have the potential to come up with a good deal of evidence in working toward solutions to such problems. The most pressing disadvantage would appear to be the relatively small numbers involved within a state. Perhaps such an obstacle could be overcome by multiple state cooperation.

At the same time such uniqueness might work to the advantage of research, it also becomes a disadvantage. The reason for this lies in the difficulty of discriminating between the effects of teaching experience and the effects of the teacher training experience. An additional impediment, that of the interaction of the one experiential factor (teaching) by the other (teacher training) further confounds the problem.

Another unique feature of the trade and industrial teacher education programs throughout the country is the type of person who is likely to be enrolled in the programs. Generally, these persons are thirty-five years of age, have had about ten years of occupational experience, and who for a variety of reasons desire to change their occupations. Thus, we look on our trainees as being more mature, usually having family responsibilities, possessing a wide variety of atypical experiences, and who usually are work oriented rather than educationally oriented. Certainly no one will disagree that we in trade and industrial teacher education currently have a unique student body who require because of their atypical characteristics unique teacher education experiences. It would appear, however, that traditionally trade and industrial teacher education programs have dwelled upon this unique feature only, and utilized it as a crutch in refusing to acknowledge their responsibility to educate as well as train their students.

The research in our field also reflects the overemphasis of the unique features as compared to those aspects trade and industrial teacher education programs have in common with other vocational teacher education programs as well as general teacher education programs. Perhaps research in this field will never get its feet off the ground until our teacher educators are willing to focus as much attention on the education of teachers as they do on providing occupationally competent personnel to fill up the vacancies in the local programs.

On the other hand, what contributions have been forthcoming from interdisciplinary research efforts as stimulated by 4c funds, is a good example of how we could capitalize on our common points? From the rather comprehensive research reviews which have recently been released and from our own search efforts it would seem that few problems have been solved in our field through these efforts. Apparently, we all came to the same ballpark to play, but the economists, psychologists, sociologists, and general educators do not want to play our game.

Alternative Approaches

What then should our course of action be? What alternatives would be most productive? One alternative which would seem to be sound is to start with a foundation built upon the literature in general teacher education. Much relatively sophisticated work has been done in the general field, a good deal of which may be applicable.

The most recent comprehensive review of research in the general field of preservice and inservice education of teachers, however, is not at all encouraging. Denemark and MacDonald (1967) indicated in the review that:

> Even casual perusal of the research literature reveals a lack of theory. It is, indeed, almost impossible to identify the theoretical basis for most of the studies reported. As a consequence it is often difficult to relate studies to each other or to identify the need for new studies. This lack of integrating framework has resulted in an obvious divorce of theory and practice.

What general teacher education has apparently accomplished is just the kind of situation we should try to avoid. The "what" approach to problem solving in research has preceded the question of "Why?" The lack of an "integrating framework" has maintained the gap between the researcher and the teacher educator.

A second alternative has been suggested by O'Brian and Schaefer (1966) in a recent review of trade and industrial teacher education research.

> It is apparent that little has been done during the past decade to take a hard look at trade and industrial teacher education. It might be rationalized that we are just too busy, the challenge too great, and the time too short. But the fact remains, more studies of the sophisticated type and less of pure conjecture need to be undertaken. Answers to questions of where we are, and where we should be going cannot be found until we do just that.

Not many trade and industrial teacher educators would take exception to the need for more sophisticated research studies in the field. There is no doubt that a more rigorous and disciplined attack on the many crucial problems in our field would result in improvement. However, the recommendation does not go far enough. With only an increase in the level of sophistication of a number of isolated research studies we would still be in danger of falling into the same confused state currently characterizing general teacher education research as related by Denemark and MacDonald.

A necessary ingredient to be added to O'Brian and Schaefer's recommendation is one suggested by Barlow (1966).

> The need of the future is a program of teacher education research planned so that in total it advances knowledge in areas of significant need. Our research needs occur throughout the entire continuum of research from the immediately useful information to that which cannot be pegged in a time sequence in relation to its practical need.

The ingredient which Barlow suggests is a planned program of research. But upon what basis does one decide what the needs are of trade and industrial teacher education? The planned program of research must grow out of some preceding development. The element Moss (1967) introduced in a recent paper, that of a "research paradigm" would be quite appropriate. He indicated in the paper that, "The attainment of satisfactory answers to our practical vocational-technical teacher education questions is therefore viewed as being dependent upon long-term programmatic research efforts, facilitated by the adoption of some research paradigm."

The adoption of the research model or paradigm is crucial to the success of a planned program of research. However, a research model, developed by researchers, phrased in their language is most likely to be understood only by researchers. The teacher educator still has no basis for communication with the researcher, and the divorce of theory and practice remains.

What is desperately needed in trade and industrial teacher education is a model, paradigm or framework to which not only the researcher but the teacher educator as well can relate and understand. Working in the broader framework of this type of model the researcher can develop his research paradigm which he finds useful. The teacher educator, on the other hand, can relate his problems in terms of the framework in such a way as to provide the researcher with a point of focus. The resulting communications would thus be vastly improved.

A Suggested Model for the Study of Trade and Industrial Teacher Education

The model which has been presented in this paper for the study of trade and industrial teacher education may in many respects be viewed as a general teacher education model as well. What has been attempted in the model is to represent the existing process in a dynamic way, to provide not only a categorical system but a series of interdependencies among the categories as well.

As a general teacher education model the diagram on the following page conveys that: a number of persons with certain characteristics who are interested in teaching undertake some type of teacher preparation--of course, some succeed and obtain a teaching job and eventually have some short-term and long-term effects on their students by performing in certain ways; and the way they perform as well as the short and long-term effects they have on their students become a basis upon which to revise the available pool of potential teachers, the process of preparing them, and the qualifications they must have to teach.

As a specifically trade and industrial model, however, there are some unique features to it. First, there are four avenues open to a person interested in obtaining a teaching position (progressing from column 1 to column 3, see Figure 1, page 18). Generally in teacher education only one or possibly two avenues are open, each of which must be directed through the teacher education program (column 2). Second, the number of categories in column 3 would be fewer as would the paths to get from column 2 to column 3. Finally, the types of characteristics and/or criteria that would be considered to be important in columns 1, 4, 5, and 6 to teach educators outside of trade and industrial would differ greatly.

Just a glimpse at the proposed model is sufficient to demonstrate its lack of depth. Working within the confines of the model, however, one can develop as much detail as he feels is necessary to study the problem in which he is interested. The important contribution of the model is to superimpose the broader frame upon the specific area under study, and to demonstrate the major contingencies within the frame.

Thus, if one were interested in the general objective of improving the teacher education program, working within the frame he should somehow account for contingencies between:

1. The number, type and availability of potential trade and industrial teachers and its effect on the teacher education program.

2. The teacher education program and its effect on the population of trade and industrial teachers.

3. The teacher education program and its effect on teacher performance and the resulting feedback of teacher performance to the program.

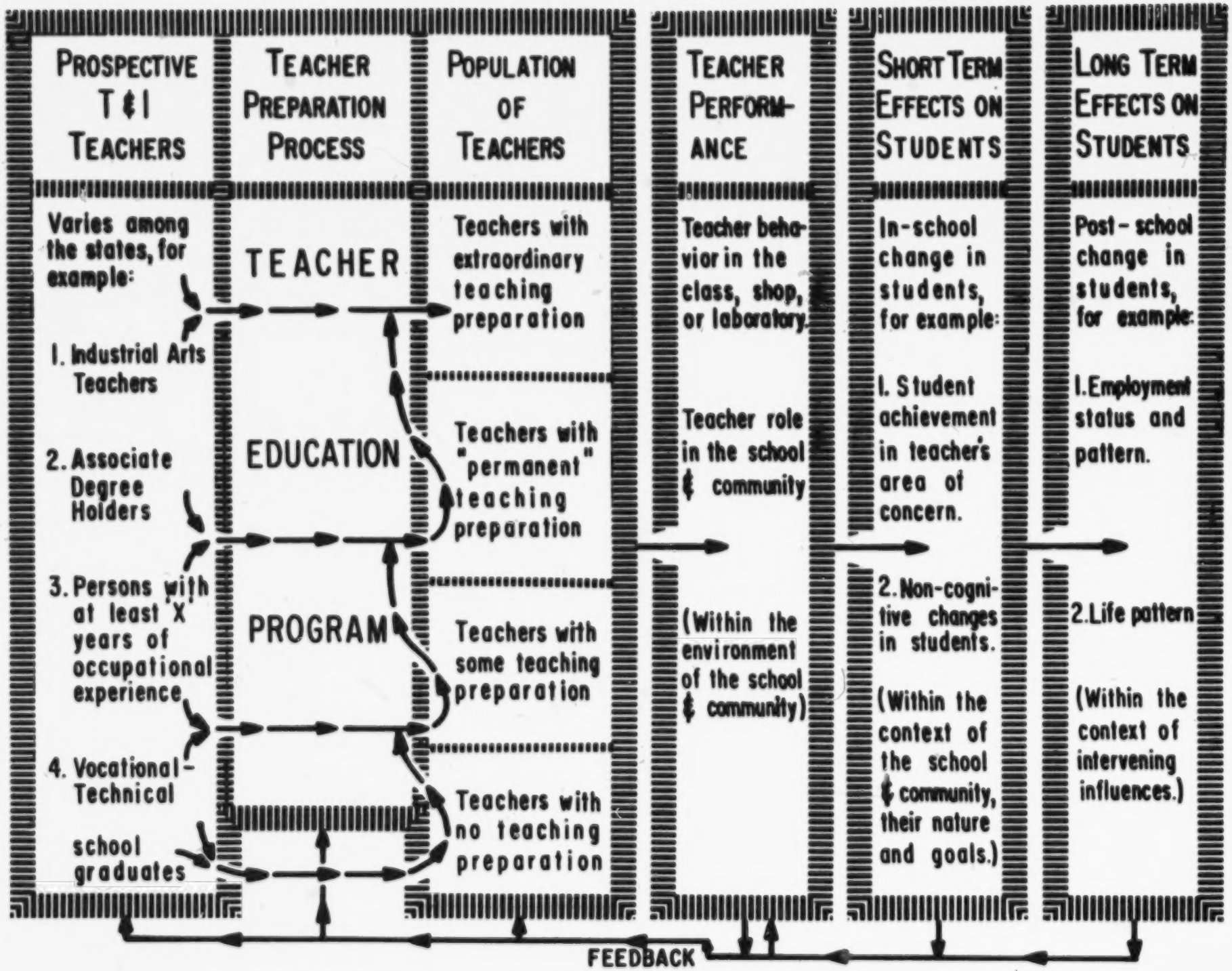
PROSPECTIVE T&I TEACHERS
TEACHER PREPARATION PROCESS
POPULATION OF TEACHERS
TEACHER PERFORM-ANCE
SHORT TERM EFFECTS ON STUDENTS
LONG TERM EFFECTS ON STUDENTS
Varies among the states, for example:
1. Industrial Arts Teachers
2. Associate Degree Holders
3. Persons with at least X years of occupational experience
4. Vocational-Technical school graduates
TEACHER EDUCATION PROGRAM
Teachers with extraordinary teaching preparation
Teachers with "permanent" teaching preparation
Teachers with some teaching preparation
Teachers with no teaching preparation
Teacher behavior in the class, shop, or laboratory
Teacher role in the school & community
(Within the environment of the school & community)
In-school change in students, for example:
1. Student achievement in teacher's area of concern.
2. Non-cognitive changes in students.
(Within the context of the school & community, their nature and goals.)
Post-school change in students, for example:
1. Employment status and pattern.
2. Life pattern
(Within the context of intervening influences.)
FEEDBACK

FIG. 1. A SCHEMATIC MODEL FOR THE STUDY OF T & I TEACHER EDUCATION

4. The teacher education program and its effect through teacher performance on the behavior of students in school and out of school.

The teacher education program viewed in this way does not exist in isolation. It exists as one aspect in the whole process outlined in the model. One of the outstanding shortcomings of research in trade and industrial teacher education has been this focus upon isolated aspects of the process to the exclusion of the essential dependencies between these aspects.

The advantages of the particular model presented in this paper are:

1. It allows for the identification of contingencies involved in the educative process.

2. The teacher education program is placed within a larger context of the educative process.

3. It ties in the direct and indirect effects of teacher education by way of feedback to the teacher preparation process.

4. It provides for a common reference for the researcher and the teacher educator.

Because of the advantages which the model provides the position that the researchers in trade and industrial teacher education at Penn State have taken is that all research efforts to be undertaken in the field must: 1) be developed within the frame of the model and 2) be justified on the basis of the relationship of study in a particular problem area to the contingent problem areas outlined in the model. If these two criteria are imposed upon research efforts then it would be more likely that "project" research would make a substantial contribution to an organized body of knowledge in trade and industrial teacher education. As valuable as programmatic research efforts can be, the resources in our field are currently limited. Thus it would be inefficient to disregard the potential value of individual project type studies.

It must be re-emphasized at this point that the model presented in this paper is not a research model, but a trade and industrial teacher education model. Essentially its purpose is to improve communications in the field--within the speciality areas of teacher education and research, and between the specialists in these areas as well. A secondary value of the model is that it provides a starting point from which research models can be developed.

The "who" and "what," "when," and "how" questions regarding research, however, may be the topic of next year's conference. It is the "why" question that you gentlemen should be attacking at this time. Without a solution to it the other questions cannot even be asked.

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III

BASIC CERTIFICATION REQUIREMENTS FOR TRADE AND INDUSTRIAL EDUCATION TEACHERS

Bernard T. Fagan[1]

The accelerated program of trade and industrial education brought on by the enactment of the Smith-Hughes law in 1917 carried with it two established principles that have had a profound effect on the training of trade and industrial teachers.

The first principle ran contrary to the rising tide for normal school or college preparation as a minimum for all teachers. The Federal Board for Vocational Education made its position clear in its pronouncement, August, 1918:

> It is, of course, essential always that the teacher shall be able to teach, but it does not follow that he shall always qualify as a professional teacher. It is much more important that the instructor in carpentering, for example, at least as regards shopwork instruction, shall be a competent carpenter than that he shall have attended a normal school. Provided he can teach carpentry to beginners, he fulfills the chief professional requirement for a vocational teacher of carpentering. This is the prime requisite and all other qualifications are secondary. He must be of good moral character, and unobjectionable in every respect, but provided always, that he can teach carpentering, he should be judged and certified in other respects as a man, rather than as a professional pedagogue.

With this admonition and with support from the National Society for the Promotion of Industrial Education, it was advocated that the individual state should serve as the sole certifying authority for trade teachers. And so it has been.

Delegating certification of trade teachers to the states reinforced the currently accepted philosophy that education was a function of the state. At the same time, it ran the risk of subjecting many trade teachers to the established requirements for general education within a given state. The faith of the early pioneers in trade education was justified, for no record has been found of such abuse by the states. A current survey reported in this paper gives evidence that this principle has not changed.

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In an effort to determine the present basic certification requirements for trade and industrial education teachers, a short questionnaire was mailed to seventy-two head teacher educators located at seventy-two different institutions of higher learning fifty states plus the District of Columbia, Puerto Rico, and the Virgin Islands. The list was compiled from the Industrial Teacher Education Directory, 1966, as compiled by G. S. Wall. An attempt was made to include those whose primary concern was trade education and to omit those whose major concern was industrial arts. It was felt that head teachers would be knowledgeable in the matter of certification, that they would be likely to respond, and that these persons have had considerable influence in the formulation of certification requirements. Had time permitted, a similar questionnaire would have been sent to the state supervisors, and an attempt would have been made to sample trade teachers to determine their concerns for certification and education.

Fifty-seven responses were received from forty-six states. For purposes of this study, Puerto Rico and the District of Columbia are counted as states. The Virgin Islands did not reply. Three returns were received from different institutions in one state. Two returns were made from nine states where more than one institution is engaged in trade teacher education.

The first, second, fourth, and seventh questions yielded precise answers and are reported as received. The third, fifth, and sixth questions yielded many modifications to the answers checked and therefore required considerable editing. It is believed that the report gives a reasonably accurate picture as reflected from the responses received.

The extremely short time available for this study did not permit securing, reading, and tabulating the certification regulations of each state. It was suggested that copies of such requirements be returned with the questionnaire. Seven were received.

An analysis of numerous comments submitted with the returned questionnaire suggests that a dual system of certification may exist in several states. One set of requirements would seem to apply to teachers in post high school and adult programs. It is to this level that responses were made. Another, and higher level of requirements may apply to teachers who work with high school students in a high school setting. One might ask at this point if the skills, knowledge, and attitudes taught to high school students are significantly different from those taught to post high school students and adults. Are teaching methods and shop management procedures of sufficient variance to justify a separate set of certification requirements?

While it is known that occupational competency tests are used in some states, only one state made mention of this fact. This particular state noted that thirty semester hours allowed for satisfactory performance on such a test could be added to sixty-three semester hours of required work ultimately leading to permanent certification.

I. WAYS OF CARRYING ON TEACHER EDUCATION

How is professional teacher education carried on in your state? The respondents were given five possible responses and were asked to check all that applied.

In assessing basic certification requirements for trade and industrial teachers, experience shows that three considerations are of major concern: 1) the general educational level achieved by the teacher-applicant, 2) the extent of occupational experience of the applicant, and 3) the extent of one's specific preparation for teaching (usually expressed in clock or semester hours of professional teacher education courses). The latter is of little concern where opportunity for obtaining professional teacher preparation or inservice training does not exist. Therefore, an attempt has been made to determine the availability of teacher-training opportunities.

TABLE 1

WAYS OF CARRYING ON TEACHER EDUCATION

No. of States	No. of Responses	Availability of Teacher Education
27	29	Contracted by state office with a college or university.
25	28	Formal residence classes on college or university campus.
33	35	Extension basis by college or university staff.
12	13	Teacher educator on state staff (college credit not granted).
29	31	Extension classes during school year and residence classes during the summer.

Teacher education opportunities for trade and industrial teachers exist in each of the forty-seven states that responded. The extent of the offerings in each state was not determined. One state indicated that all trade teacher education was carried on by a teacher educator on state staff (college credit not granted). Six other states made a similar response but added that extension classes were offered during the school year and residence classes during the summer. No other designation was made by these six states.

All other states (40) indicated multiple offerings and often by more than a single institution within the state. Apparently this leads to differences in application of state-wide certification regulations since multiple replies from a single state did not always yield identical answers. This same confusion was evident

in response to other questions in the questionnaire. One respondent wrote, "No one person can answer for the whole state. We all do it differently." Another quipped, "I can't speak for the other colleges. We sure need to get together. No one knows what the other fellow is doing."

Twenty-nine respondents indicated that teacher education was contracted by the state office for vocational education with a college(s) or university(s). Twenty-eight reported formal residence classes on a college or university campus. Thirty-five respondents show classes on an extension basis taught by college or university staff. Thirteen reported a teacher educator on the state staff with no college credit granted. Thirty-one responded that extension classes are offered during the academic year and residence classes during the summer. In most cases, this latter category could well be a duplicate of the three preceeding categories.

The personal views of the respondents to various facets of the teacher education program and to the quality of trade teachers will be found in section VII.

II. GENERAL EDUCATION REQUIREMENT

What is the minimum level of formal education that is acceptable for beginning trade and industrial teachers in your state? Forty-five states responded.

TABLE 2

MINIMUM LEVEL OF FORMAL EDUCATION ACCEPTABLE FOR BEGINNING TRADE TEACHERS IN 45 STATES

No. of States	Level
3	Less than high school graduation
37	High school graduation
4	High school graduation plus ____ hours professional teacher training
--	2 years college preparation
1	4 year college preparation
--	4 year degree

Three states do not require completion of high school as a prerequisite to becoming a trade teacher. Thirty-seven have set high school graduation as the minimum academic requirement. Four states require a high school certificate plus 6, 12, 16, and 30 semester hours respectively before issuing an initial certificate

to teach a trade. One state requires a college degree as a minimum of which 24 semester hours must be professional teacher education. It is worthy of note that this particular state indicated general satisfaction with entrance requirements but registered dissatisfaction with the teacher education program. The respondent also states that present certification requirements are too low and that the teachers in that state are low in trade competence.

This raises the question again as to the balance between academic education and trade experience that should be required to yield maximum return in high quality trade teaching. Dr. Charles A. Prosser, first director of the Federal Board for Vocational Education, cautioned against an over-emphasis on academic education at the expense of trade experience. His admonition seems to have borne fruit to this day. But his was the advice of 40 years ago when grammar school education was the norm and high school graduation was the unusual. Has the increase in the average education of citizens combined with increased demands placed on skilled workers given rise to a reassessment of our position on minimum academic requirements for trade teaching? Perhaps the real deciding factor is in supply and demand. At any rate, in this day of demand for more and higher education on all fronts, including increasing pressure for a master's degree as a prerequisite to academic high school teaching, it should behoove the leaders in trade and industrial education to seek out a tenable position on teacher qualifications.

III. PREPARATORY TRAINING OF TEACHERS

How many semester hours (or equivalent) of professional teacher education are required before a new trade and industrial teacher begins to teach a class? This question may suggest that in teaching there are certain skills and knowledge that one who would teach should possess before taking on the responsibilities of teaching. Such a viewpoint seems consistent with the broadly accepted belief that he who would teach an occupation must be thoroughly versed and experienced in the occupation he is to teach. Would it not also hold true that when a tradesman is called to the role of teacher, he should bring with him adequate training and/or experience to meet the demands of his new occupation--teaching?

Thirty-six states reported that college hours of professional teacher education are not required before a tradesman begins to teach a class. Five states indicated 2 to 6 semester hours required. Four states noted 12 to 15 semester hours. Three states reported 12, 40, and 40 clock hours while three others designated teacher orientation sessions of 20, 30, and 30 clock hours. Many states may also be requiring attendance at orientation sessions of varying length for beginning teachers but such information was not noted on the questionnaire.

It has long been the practice of industry to invest time and money (including salaries for learners) in training men for new jobs. During this time, production by the learner is not expected. This has not been generally so in teaching. Expenditures for instruction have usually started with a teacher assigned and functioning in a class or shop situation. It has been generally

accepted that one who would prepare to teach will invest his own money and time to acquire this preparation. It is broadly believed that one cannot receive a salary for teaching unless he is assigned to a class which is in operation. Industrial educators might do well to weigh the cost of a short preparatory program against the advantages of raising the level of beginners in teaching from the unskilled to that of the semi-skilled.

Further study is in order to determine the kinds and amount of initial experiences that would be of greatest benefit to any given shop teaching situation.

IV. INITIAL TEACHING CERTIFICATES

For what period of time is the initial teaching certificate valid? Forty-five states responded. In all states, including Puerto Rico and the District of Columbia, certificates are required.

TABLE 3

PERIOD OF TIME FOR WHICH INITIAL TEACHING CERTIFICATES ARE VALID IN 45 STATES

No. of States	Period of Time
29	1 year
5	2 years
7	3 years or more
4	other

Twenty-nine states issue initial certificates that are valid for one year. Five states issue certificates for a period of two years and seven states certificates for three, four, or five years. One state grants certificates for periods varying from one to five years according to the academic and trade qualifications submitted at the time of employment. Two states reported that the initial certificate was permanent, but in these states, the entering qualifications were somewhat higher than those of other states.

The structure found in all but two of the forty-five states responding makes provision for training as a prerequisite to renewal of certificates. Those states granting certificates from two to five years usually carry a comparatively larger number of required semester hours for renewal but leave it to the individual teacher to budget his own time in this regard.

V. RENEWAL OF CERTIFICATES

How many semester hours of professional education courses are required each year to keep a trade and industrial teaching

certificate in force? The basic assumption is that the renewal of most teaching certificates is based on semester hours of work completed and that few states issue life certificates to beginning teachers.

Six states reported that academic credit was not required to keep a trade and industrial certificate in force and some of these specifically stated that renewal was based on satisfactory performance on the job. Twelve states indicated that from 1 to 3 semester hours are required. Fourteen states noted that 4 to 6 semester hours each year is necessary for renewal of the certificate. Six states provide some choice in the allocation of school time as they indicated from 3 to 30 semester hours over periods of from 3 to 6 years. One state requires 50 clock hours of in-service teacher education each year for four years.

There seems to be general agreement among trade educators that continuing education for teachers, both resident and itinerant, is an effective way of upgrading the level of performance of the trade teacher. Much could also be said for the manner in which such courses add to the feeling of personal well-being, pride, and security that is experienced by the trade teacher who participates in inservice improvement courses.

Since most states do have a requirement of some kind in order to remain in the profession, it may be appropriate to examine the offerings and to assess the effectiveness of each one as it relates to total program. What experiences may be of greatest value when given before the new employees begin to teach? What experiences can be most meaningful when given early in the teacher's career? What experiences can be provided for the experienced teacher who has completed the basic courses and who yet continues in course work to meet certification requirements or in response to his own desire to keep growing?

The competencies needed by one who would teach in a trade and industrial program were listed by John P. Walsh in his study, Teacher Competencies, (1960). To what extent are preservice teacher education programs effective in developing these competencies? Are additional competencies needed by all teachers which are new to the present decade? What is being done to develop the abilities needed for this day and the decade ahead?

VI. PERMANENT CERTIFICATION

What is the minimum number of semester hours required at which permanent certification is granted or beyond which additional course work is not required? This question should not imply that semester hours of college courses are the only sound basis for granting permanent certification of trade and industrial teachers. A survey of the responses received does indicate that such counting looms large in the criteria for issuance of such a certificate.

Twenty-five states reported no provision for issuing a life certificate to trade and industrial teachers who did not possess a baccalaureate or higher degree. Many of these states did suggest that trade and industrial teachers who held a degree in teaching

and who could qualify for a provisional or standard certificate as generally provided for teachers in general education could qualify for life certificates on approximately the same basis as the academic teachers.

The minimum requirement for permanent certification was 9 semester hours and was indicated by one state. Five states fell in the 9 to 12 bracket and three states indicated 15 to 16 semester hours. Five states reported 24 to 36, three listed 42 semester hours and two held to a requirement of 60 semester hours. One state requires an Associate in Arts degree with a minimum of 22 hours in trade and industrial professional courses and another state listed a requirement of 200 to 225 clock hours. One unique requirement was submitted by one state which listed 63 semester hours plus an additional 30 semester hours granted upon successful completion of a rigorous trade proficiency examination.

The range is wide in the pattern of teaching certificates good for life. Inherent in the pattern is a challenge at each end of the continuum. How can a program of teacher education be constructed that will challenge the teacher who has fulfilled the minimum requirements early in his career? What sort of enrichment and challenge can be built into a teacher education program for those who are required to pursue course work at some level during their entire tenure as a teacher?

Perhaps our traditionalism is causing us to overlook opportunities that are already built into various systems of certification. A more imaginative approach to the planning of teacher education programs may be required if trade and industrial education is to meet the challenge of the current decade.

VII. OPINIONS OF TEACHER EDUCATORS

It has been well established that people in social situations do not always act in accordance with their beliefs. Nevertheless, it contributes to our understanding if we know the opinions of knowledgeable people on factors that are a part of, or related to, the topic under discussion. To this end, respondents were asked to express an opinion on eight statements that are related to teachers and teacher education. Opinions were secured from one person in each of thirty-six states, from two persons in each of nine states, and from three persons in a single state--a total of fifty-seven responses. All persons did not respond to every item. Each person was assured anonymity.

In assessing the results of this section of the questionnaire it must be remembered that the respondents are all teacher educators and that in all probability, most of them are head teacher educators. It may be reasonably assumed that the opinions reflect a considerable amount of bias. At the same time, we may assume that these respondents have no small amount of influence in matters of teacher qualifications and teacher education. The exact amount is not known and it is certain to vary among the states.

TABLE 4

REACTION OF FIFTY-SEVEN TEACHER EDUCATORS
TO EIGHT STATEMENTS ABOUT TEACHERS AND TEACHER EDUCATION

	Yes	No	Not Decided	Total Response
1. Generally satisfied with entrance requirements.	31	23	1	55
2. Generally satisfied with teacher education program.	24	30	3	57
3. All T & I teachers hold at least 2 year degrees.	19	26	8	53
4. All T & I teachers should hold a 4 year degree.	13	32	6	51
5. Present certification requirements are too low.	28	25	3	56
6. Trade competence level is too low.	10	41	3	54
7. All professional training should carry approved college or university credit.	42	11	3	56
8. Technical training courses should be added to present professional program.	43	9	4	56

Teacher educators sampled indicate a moderate degree of satisfaction with entrance requirements for trade teachers. At least 57 percent of them said so, but 42 percent indicated they were not satisfied.

The reverse is true in terms of satisfaction with the teacher education program, as 42 percent expressed satisfaction and 53 percent noted dissatisfaction. In creating a climate for change, one is reminded that dissatisfaction with the past or present may well be a prelude to change.

The pressure for degree teachers has long been with us. Results show 36 percent favor a two year degree as a minimum for all trade teachers and approximately 50 percent are opposed. It is significant that eight persons or nearly 15 percent of the respondents have not yet taken a position on this point.

Trade education is apparently not yet ready for a degree requirement for beginning teachers, though 25 percent of the respondents feel that it should be so. Those who disagree number 32, or about 63 percent of the respondents, with a total of six (12%) not yet decided.

Question 5 relates to the level of present certification requirements in which the group seems to be evenly divided. Since this same group had earlier expressed a reasonable degree of satisfaction with entrance requirements, it would seem that "too low" was interpreted as the extent of experience which one must move through from the point of initial employment to that of maximum certification.

Ten states reported low trade competence level but forty-one were of an opposite opinion. Three of the ten reporting low competence level made comment that the regulation was acceptable but enforcement was erratic.

One may interpret question 7 which suggests that professional courses should carry approved college credit as being the clamor of trade teachers for "negotiable scrip" but it would seem to be a safer assumption to view the response as a reflection of the bias held by most teacher educators who are an integral part of a college or university setting. A plea for college credit was held by 42, or 75 percent, of the respondents and was opposed by 11 persons, or 20 percent of the total. Three persons, or 5 percent of the group, remained undecided. Current literature suggests an increasing desire on the part of trade teachers for college degrees and this would suggest an assessment of the educational ambitions of all trade teachers as an indicator of emphasis for the future.

Should technical training courses be added to the present teacher education program? Forty-three, or 77 percent of the respondents, said "yes." Nine persons (16%) were opposed. Four persons (7%) remain undecided.

It may be that the addition of technical courses would serve as "enrichment" for those who continue in course work after meeting a basic professional committment. Some may see it as a means of keeping up with the rapid changes within each occupation. For others, it may be a convenient way to achieve a personal goal. The response to this item suggests an assessment of the benefits that have been derived by those who have participated in such programs. Wayne State University and the University of Missouri are two among many who have had some experience with such programs.

CONCLUSIONS AND IMPLICATIONS

Teacher education opportunities are offered throughout the United States with the possible exception of Alaska. The availability of such training to the individual teacher at the time and place where he can and would use it is not known.

Three states do not require high school graduation as a prerequisite to trade teaching. One state requires a baccalaureate degree. All other states in the survey require high school graduation with four of these specifying a limited number of semester hours, presumably in teacher education.

Thirty-six states permit experienced tradesmen who are high school graduates to begin teaching without any formal teacher-training. All states require certification of teachers. Twenty-nine

issue one year permits. Fourteen issue permits from two to five years duration. Two states reported the issuance of life certificates. Course work plus satisfactory teaching experience are the usual basis for renewal of certificates. A few states permit substitution of industrial contact for a part of required course work.

All but six of the reporting states require from two to six semester hours each year for renewal of certification. One state requires fifty clock hours of teacher education. Continuing education is a generally accepted pattern for trade teachers.

Few states provide for life or permanent certification of non-degree teachers. Therefore, most trade teachers are obligated for a periodic return to the classroom as a student or to industry as a worker.

Reactions to several statements on teacher certification and education show sufficient division of opinion to warrant a study in each of the identified areas. There is some indication that minority opinions of today may be rapidly growing in the near future. Teacher certification and education with a half century of trust and tradition behind it may have become immune to research. Studies in depth might reveal that programs and requirements are out of step with the times.

This paper may be more significant for the questions it raises, rather than the light it may shed. Following are a few questions which have posed a challenge to the writer in the preparation of this paper:

1. To what extent are present certification requirements inappropriate for the coming decade? What goals should be set? What steps should be taken to achieve these goals?

2. To what extent do present certification requirements give reasonable assurance of occupationally competent and professionally efficient teachers?

3. How can the occupational competence of the teacher be determined? What criteria can be used in establishing the level of competence required for effective teaching?

4. What level of occupational competence and teacher preparation will labor and management support for those who teach industrial workers?

5. Assuming that upgrading of teachers is desirable, what ways can be derived within present teacher education framework to make available new experiences for teachers? Short of regulation, how can teachers be encouraged to take advantage of such opportunities?

6. To what extent do teacher certification requirements and teacher education programs conform to the educational and other growth aspirations of teachers?

7. What pattern of certification and training can be developed that will assure a reasonable supply of trained <u>leaders</u> for trade education.

8. How can the resources of industrial and educational agencies be utilized to extend the present offerings of teacher education programs?

9. What is the role of teacher educators in the formulation of certification requirements for teachers?

IV

MINI-PROPOSAL FORMAT

Durwin M. Hanson[1]

Since one of the objectives of this seminar is to develop a proposal(s) in the area of trade and industrial teacher education and certification, it is the purpose of our time these few minutes this morning to discuss a proposal format. There is no paucity of ideas for research and developmental projects in vocational education. However, since it is apparent that a number of us face problems regarding teacher certification, it is the hope of this seminar that a number of proposals for research in this area may be forthcoming.

The formal proposal has become the basis which has been utilized by funding agencies for supporting research and development projects. While it may be that funding agencies such as the Division of Adult and Vocational Research may have established priorities and also suggest areas of research and development the major responsibility rests with the initiator or team of researchers to develop a clearly defined proposal.

The format which is being presented is an outline of the maximum ingredients to consider in the development of a proposal. The development of the problem includes a translation of the idea into a clearly defined problem, presentation of supporting evidence, formulation of rationale, and concise statement of objectives.

The Problem. It is suggested that the problem be clearly stated in broad terms at the beginning of the proposal, preferably in the first paragraph. Following the statement of the problem, it might be well to consider stating supporting arguments regarding the importance and significance of the problem.

Review of Literature. The review of literature requested in Conditions and Procedures, OE-4262, for projects submitted under Section 4c of the Vocational Act of 1963 serves as a basis for reviewers to determine to what extent the researcher(s) has devoted time to determine what research and development programs have been completed which have direct relationship to the central idea, problem or theme from which the rationale is based.

The Rationale. The rationale, theoretical framework or model is a brief conceptualization of the problem, based on the problem

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[1]Durwin M. Hanson, professor and head, Department of Industrial and Technical Education, School of Education, North Carolina State University at Raleigh.

and the review of related studies. The rationale essentially is a transition step in which the researcher bridges the gap between previous studies and the objectives of the proposal.

The Objectives. The objectives should be stated as clearly and concisely as possible. They may be in the form of questions to be answered or as hypotheses to be tested. Objectives provide the roadmap and/or direction of the project.

A number of other elements to consider in developing a proposal include consideration as to the innovative aspects or qualities; significance of the study; the design, plan or procedures; evaluation and/or analysis; identification of personnel and qualifications of key research personnel; time schedule; budgetary items; and consideration as to dissemination of results through publication(s), seminars or other media.

PROPOSAL PREPARATION FORMAT

A. Problem Statement:

1. Give a brief statement of the problem (three sentences maximum).

2. Define all terms operationally (confine meaning to that which can be measured) or by example if they are only supportive to the statement.

B. Rationale:

Limit to a paragraph or two on need for the study.

C. Objectives:

1. State objectives in the same terms defined in the problem statement.

2. Statements of objectives must be logically derived from the problem statement.

3. State hypotheses (experimental research only). Hypotheses are untested suppositions about the necessary and sufficient conditions that produced the problem.

D. Procedures:

Present a tentative list of activities in a logical sequence for each stated objective, including a description of:

a. Design
b. Population and sample
c. Data to be gathered--specifically
d. Instrumentation for data collection

E. Analysis:

Outline the method of analysis the data will be subjected to for each objective.

F. Time Schedule

G. Budget:

Estimate total cost.

H. Outcomes:

List concisely what you see as potential development and dissemination activities that the results of this research might generate.

APPENDIX A

MINI-PROPOSALS DEVELOPED

Four mini-proposals are included in this appendix. The reader will find that each proposal is in a different stage of progress and remains in the same state of development it was in at the close of the meeting except for minor editing. The basic format for the proposal is outlined in Chapter IV by Dr. Durwin Hanson. The reader is reminded that these are not polished mini-proposals. They are included in this publication to provide some ideas and inspiration for others to engage in research on these or similar problems.

MINI-PROPOSAL NO. 1

WHAT PROFESSIONAL COMPETENCIES ARE NEEDED FOR SUCCESSFUL TEACHING

Problem Statement:

To identify and determine an appropriate structure of the professional competencies and their elements required for successful performance as a vocational-technical teacher and further to determine the combinations, priorities, and degree of proficiency most appropriate for the various types of programs and teaching situation.

Rationale:

The major source of occupationally competent teachers is among those persons who have obtained such competencies, at least in part, through occupational experiences. These occupational competencies are to be determined by appropriate means. When such persons are employed as teachers of that occupation, they must obtain an additional set of competencies to effectively perform in their new role and obtain desired behavioral outcomes in their students. It is recognized that there is a complex of professional competencies and that each exists along a continuum of sophistication and are interrelated; also, that then requires a degree of proficiency, for each element of the various competencies may differ according to the combination of factors within the total educational situation.

It is further assumed that the appropriate combination of competencies can be developed through a teacher education program.

Objectives:

1. To develop a methodology for identifying and determining a structure of competencies.

2. To develop and test a model structure of competencies that may be potentially appropriate to a wide range of educational fields.

3. To determine necessary and efficient sequences of instructional experiences to obtain the appropriate pattern of competencies.

4. To determine the criteria which differentiate programs, teachers, students, teaching situations, etc., and their relationships to the kind and level of competencies.

MINI-PROPOSAL NO. 2

A MODEL FOR THE MEASUREMENT OF OCCUPATIONAL COMPETENCY

Problem Statement:

The development of a model (techniques and criteria) for the measurement of occupational competency of high school teachers of trade and industrial education.

Definitions:

Model identifies a system of instruments which are conceived, developed, used, evaluated and refined to measure the skill, related technology and ancillary knowledges related to a trade or industrial occupation.

Measurement relates to a testing program and appropriate instruments in which performance (skill) and related technical knowledge are applied in validating objectively the occupational competency of the potential teacher at a journeyman's level.

Trades and Industry--Taxonomy from U. S. Office.

Occupational Competency refers to capability of the potential teacher to demonstrate proficiency in the performance of any operation or process involving manipulative skills, and related technical knowledge at a journeyman level based on bonafide wage-earning, O.J.T. experience in a trade or industrial occupation.

Journeyman relates to that degree of occupational experience and competency in which the craftsman/artisan has completed an approved apprenticeship or learning period and has served beyond this time in a bonafide, wage-earning occupation to the point where labor/management recognizes him/her as capable of performing any skill and applying the related technical knowledge within a trade or industrial occupation.

Rationale:

Trade and industrial program is dependent upon proficient occupationally qualified teachers. Valid system of measuring occupational competency of trades and industrial teachers in lieu of present practices is needed.

APPENDIX A

Objectives:

Develop a model for measurement of occupational competency.

Establish specifications for validating occupational competency.

Procedures:

1. Definition of the population

   Selected sample
   a. Drawing sample (selected trades)

2. Development of instruments to measure:

   a. Performance (skill)
   b. Related technology
   c. Ancillary knowledge
   d. Establishment of specifications for occupational competence (variables)

3. Tryout, refinement and modification of instruments

4. Administration and validity of instruments

5. Collection and analysis of data

6. Development of a model

7. Summary, interpretation and generalization into a model

MINI-PROPOSAL NO. 3

WHAT MIGHT BE THE MOST DESIRABLE PRESERVICE EXPERIENCES FOR NEW TEACHERS?

Problem Statement:

The extent of adoption of professional teacher behavior patterns by first year teachers of professional competencies taught in three orientation programs.

Assumption:

1. Teachers all possess the necessary trade experience (occupational competencies)

2. Materials supplied to all teachers (same)

APPENDIX A

Design:

	Groups		
	I	II	III
Level of professional preparation	Little (no formal effort)	Some 30 clock hrs. (two week orientation)	More 90 hrs. plus four weeks student teaching
Numbers in each group (teachers)	N = 40	N = 43	N = 65

Variables:

1. Formal educational level; high school grade point averages (level and quality)
2. Personality tests (administered to teachers)
3. Attitude test (administered to teachers)
4. Other tests or measures (data available)
5. Scores on instruments to be developed
6. Intangibles to be identified

Procedures:

1. Development of an instrument to determine or analyze the extent to which professional skills taught in orientation courses are being used
   a. Items in Taxonomy by John Walsh will be used as a starting point and will be revised into later development adapted to ascertain for example:
      1) Good demonstration
      2) Adequacy and level of information presented
      3) Use of visual aids in teaching
      4) Techniques of shop management
      5) Others
2. Techniques for collection of data (suggested)
   a. Interview with teachers (schedule)
   b. Observation
   c. Student survey (understandings or teacher effectiveness in using)
   d. Ratings from supervisors
   e. Student achievement (as a possibility)
3. Comparisons of three groups as to adoption of professional teacher behavior patterns

4. Analysis of data

5. Summary, conclusions, interpretation, and generalization

6. Feedback for the content to be used in the development of the next orientation program

MINI-PROPOSAL NO. 4

RELATIONSHIP OF OCCUPATIONAL COMPETENCY TO STUDENT ACHIEVEMENT

Problem Statement:

To determine impact of differences of teacher's subject matter (occupational) competencies on student achievement.

Study to be delimited to secondary school trade and industrial programs and one subject field will be studied, such as machine shop. (Note: the design of this study could be applied to post secondary as well as secondary.)

Assign a teacher to a particular group of students for a period of two years with the teacher having a key part of the students' occupational training program. Amount of instructional time devoted to occupational training is approximately the same.

Rationale:

1. People in the profession feel that this study is important and the members of this subcommittee share in this belief.

2. It is a prerequisite question to a whole series of questions that should be researched.

3. It is necessary to look at causal relationships as opposed to discovering if any relationships exist.

4. This design can be used at any level of trade and industrial education or for any occupational area or for any combination of these.

Objectives:

1. That increments in subject matter competency of the instructor do not increase students' achievement in terms of technical knowledge, manipulative skills, or desirable attitudes toward occupation for which preparation is given.

2. There is no relationship between technical knowledge, manipulative skills, or attitude toward the occupation and amount of work.

   a. The occupation that the man is teaching
   b. Directly related occupational, or
   c. Total account of work experience

APPENDIX A

Procedures:

A. Design

Using several subgroups of student classes, each group homogeneous with respect to general achievement and aptitude, this study will attempt to predict the criterion measures of students' occupational achievement, using a series of independent measures of teacher characteristics. This multiple regression technique will make possible the isolation of the effect of subject matter competency as one teacher's characteristic on each of the three criterion measures of student achievement.

B. Population

The population will consist of all the twelfth grade vocational machine shop classes in public secondary schools in the United States with the following characteristics:

1. All the students in the classes will be seniors and in the second year of vocational instruction under the same teacher.

2. They will have received not less than three hours of instruction daily in the program. (Note: The number of hours of instruction may need to be adjusted to fit the situation.)

3. Class size shall be between fifteen and twenty-four.

4. No students shall have taken more than one year of previous instruction in industrial arts metals prior to the two-year vocational program of study.

5. Average measured I.Q. of each class and the average scholastic achievement of each class as measured by comparable standardized tests shall be determined. Based on the range of these averages each class shall be assigned to one of nine cells of equal size (number of classes) based on high, medium, and low I.Q. and high, medium, and low standard achievement.

(Nine cells will be found by the population stratification.)

A sample of about 50 classes will be selected from each of the nine cells of the stratified population of approximately 540 classes.

Data to be Gathered:

A. Students

1. Overall I.Q. measures on standardized test which includes verbal and nonverbal scores

2. Percentile measures based on senior high school grades, as determined by local school

3. Technical information scores of students as determined by some standardized instrument or procedure as devised, hopefully, by Group I

4. Determine evaluation of classes manipulative skills on an objective rating scale.

5. Measure attitude toward occupation on the psychedelic perversion occupational inventory. (It is assumed that this instrument was developed by Group I.)

B. Teachers

1. Technical information, manipulative skills, and attitudes as for students

2. I.Q. scores to include verbal and nonverbal

3. One or more measures of personality that will yield scores such as extroversion and introversion and social ability

4. Age in years, years of occupational experience (in subject matter taught, in directly related occupations and total work experience)

5. Also to be considered are type of jobs, supervisory or nonsupervisory; number of different job classifications he has held; some measure of fecency of experience and how long he has been out of trade on full-time basis; average number of months per year of work experience on part-time basis since leaving occupation on a full-time basis.

6. All of these factors on work experience are to be correlated with achievement in the three categories.

7. Secure information with respect to years (amount) of formal education in technical education, professional education, and general education prior to entering teaching and amount after entering the field.

(Note: In the multiple regression equation to predict student achievement, no measures of kind or amount of teacher's work experience will be used except those measures of subject matter competence.)

APPENDIX B

SEMINAR AGENDA

National Invitational Research Development Seminar on Trade and Industrial Teacher Education and Certification

Dates: October 9, 10, and 11, 1967

Place: Stouffer's University Inn, 3025 Olentangy Road, Columbus, Ohio

Planning Committee:

Robert M. Reese, Chairman	The Ohio State University
Carl J. Schaefer	Rutgers--The State University
Ralph Wenrich	University of Michigan
Charles Rogers	Center for Occupational Education, North Carolina State University
Durwin Hanson	North Carolina State University
Calvin J. Cotrell	The Center for Vocational and Technical Education, The Ohio State University

<u>Monday, October 9, 1967</u>

9:00-9:30 a.m.	Setting the Stage--*Robert M. Reese*
9:30-10:40 a.m.	Report on a Review of Recent Research in Teacher Education and Certification--*George L. Brandon*
10:50-12:00	Report on Trade and Industrial Teacher Certification Requirements in the Various States--*Bernard T. Fagan*
1:30-4:30 p.m.	Identifying Needed Research in Teacher Education (and establish priority)--*Ralph Wenrich*
6:30-9:00 p.m.	Identifying Needed Research in Teacher Certification (establish priority)--*Frank Wimer*

<u>Tuesday, October 10, 1967</u>

8:30-9:30 a.m.	A Format for Research Design--*Durwin Hanson*
9:30-12:00	Develop Research Designs for Priority Topics in Teacher Education (a small group activity)--*Calvin Cotrell*
1:30-4:30 p.m.	Continue Design Development
6:30-9:00 p.m.	Develop Research Designs for Priority Topics in Teacher Certification (small group activity)--*Trevor G. Howe*

<u>Wednesday, October 11, 1967</u>

8:30-11:30 a.m.	Continue Research Design for Teacher Certification
1:00-2:30 p.m.	Reports on Designs Under Development to Total Seminar Group --*Calvin Cotrell*
2:30-4:00 p.m.	Procedure for Action--*Ralph Wenrich* *Research Commitments of Participants *Function of Trade and Industrial Research Committee *Getting Commitment from Others
4:00 p.m.	Adjourn

APPENDIX C

SEMINAR PARTICIPANTS

Chairman

DR. ROBERT M. REESE, Professor and Chairman of the Academic Faculty for Vocational-Technical Education, The Ohio State University, Columbus, Ohio 43210.

Trade and Industrial Education

DR. DAVE ALLEN, University of California, School of Education, Division of Vocational Education, Los Angeles, California 90024.

DR. GEORGE L. BRANDON, Head, Department of Vocational Education, Pennsylvania State University, University Park, Pennsylvania 16802.

MR. JUSTICE CHENEY, Associate Professor, Division of Vocational and Technical Education, State University College, Oswego, New York.

DR. CALVIN J. COTRELL, Specialist in Trade and Industrial Education, The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, Columbus, Ohio 43212.

MR. HARRY DAVIS, State Supervisor, Trade and Industrial Education, 610 State Office Building, 65 South Front Street, Columbus, Ohio 43215.

MR. BERNARD FAGAN, Division of Vocational Education, University of Kentucky, College of Education, Lexington, Kentucky 40503.

DR. DURWIN HANSON, Head, Industrial and Technical Education Department, North Carolina State University, Tompkins Hall, P. O. Box 5096, Raleigh, North Carolina 27607.

DR. TREVOR HOWE, Associate Professor and Director of the Research Coordinating Unit, Education Department, Iowa State University, Ames, Iowa 50010.

MR. JOHN INGRAM, State Director, Vocational Education, Department of Education, 607 State Office Building, Montgomery, Alabama 36104.

DR. JEROME MOSS, Professor, Industrial Education Department, and Co-Director of the Research Coordinating Unit, University of Minnesota, Minneapolis, Minnesota 55455.

DR. ROBERT TOMLINSON, Professor and Chairman, Division of Industrial Education, Department of Vocational and Technical Education, University of Illinois, Urbana, Illinois 61803.

MR. RALPH WENRICH, Professor and Chairman, Department of Vocational Education and Practical Arts, University of Michigan, Ann Arbor, Michigan 48104.

MR. FRANK WIMER, Director, Trade, Industrial and Technical Education, State Board for Vocational Education, P.O. Box 248, Olympia, Washington 98501.

Observers

DR. JOE P. BAIL, Professor and Chairman of Agriculture Education, Cornell University, Ithaca, New York.

DR. MARGARET BARKLEY, Associate Professor of Home Economics, Arizona State University, Tempe, Arizona.

DR. RUSSELL HOSLER, Professor and Chairman, Business Education, School of Education, University of Wisconsin, Madison, Wisconsin.

Representative of A.V.A.--Trade and Industrial Research Committee

DR. C. THOMAS OLIVO, Director, Division of Industrial Education, New York State Department of Education, Albany, New York 12224.

APPENDIX D

REACTIONS OF OBSERVERS

The following three letters were received from those persons who were invited from other vocational education services as seminar observers.

ARIZONA STATE
UNIVERSITY — TEMPE, ARIZONA 85281

October 20, 1967

Dr. Robert Reese
School of Education
1885 Neil Avenue
Ohio University
Columbus, Ohio 43210

Dear Dr. Reese:

What a pleasure it was to be a part of the Trades and Industry Seminar! My understanding of your field has been greatly increased.

Enclosed is my observer's report.[1] I am sorry it has been a little late, but pressures here on campus have kept me busy.

Thank you again for the rare opportunity, and I hope others will have a chance to do the same in other seminars.

Sincerely yours,

Margaret V. Barkley

Margaret V. Barkley
Professor of Home Economics

MVB js
Enc.

[1] See page 51

SOME BENEFITS FROM BEING AN OBSERVER OF THE NATIONAL INVITATIONAL RESEARCH DEVELOPMENT SEMINAR ON TRADE AND INDUSTRIAL TEACHER EDUCATION AND CERTIFICATION

In my role as an observer, I was able to ascertain that:

1. The commonality of our vocational problems suggested to me that we need to work together to identify practices that are applicable to more than one field and to formulate tentative solutions to some of the problems so they can be subjected to testing.

2. The interplay between the "traditionalists" and "innovators" was most interesting too and indicated that we in vocational fields must take time to clarify our philosophy for the field in general and philosophies for each subject area so that we are operating on common bases.

3. The presentation of research models by two of the participants at the conference pointed out to me a need for a research model(s) for vocational education so that findings from research can be more universally generalized to all of the fields in vocational education.

4. Although teacher certification for the individual states has some unique characteristics there are many common requirements. It seems as one result of attending the seminar that vocational educators need to carefully identify the role of the vocational educator and design a sound program of teacher education. We might then assume the leadership in obtaining changes in teacher certification to more nearly fit this carefully planned teacher education program.

5. More such small group meetings should be arranged between educators from the various vocational areas so there is more understanding between fields. My comprehension of trade and industry as a field was greatly expanded.

6. It seemed to me that as the result of attending the conference that at least one education class should be arranged so that all vocational education teaching candidates can exchange ideas.

THE UNIVERSITY OF WISCONSIN
SCHOOL OF EDUCATION
Madison, Wisconsin 53706

Department of Curriculum and Instruction

Telephone: 262-1711
Area Code 608

October 18, 1967

Dr. Robert Reese
Dept. of Vocational Education
School of Education
The Ohio State University
Columbus, Ohio

Dear Dr. Reese:

In response to your request, I am delighted to give my impressions of the situation in which I and others served as observers to the recent National Invitation Research Development Seminar on Trade and Industrial Teacher Education and Certification.

As I told you in person, I appreciated very much this opportunity to sit in on this conference. I learned a great deal from this procedure of having representatives from agriculture, home economics, business education, and other services, where it is feasible, to sit in on a conference sponsored by T & I or by any of the other vocational areas. It is certainly an effective way to improve communications between and among the various areas.

While I have had an opportunity over the years to participate in and observe many different seminar discussions in various areas, this was the first opportunity I have ever had of observing or participating in a session sponsored by Trades and Industry.

I certainly want to congratulate you, Dr. Taylor, Dr. Cotrell, and others who conceived this idea for your vision and wisdom in making it a reality.

I was so impressed with the idea that you can be assured that I shall transmit my enthusiastic recommendation to appropriate individuals in business education to follow a similar pattern where it would seem desirable and appropriate.

Certainly the issues and problems that face educators in the field of trade and industry are similar to those in business education and the other vocational fields. The very fact that our problems are similar is important for us to know.

While it was difficult for me to spare the time that your conference required, I am pleased I had the opportunity to be there. I am sending

a copy of this letter to Dr. Harry Huffman who is our representative in business education in the Research Center at Ohio State. It was he, I understand, who recommended that I be an observer at this conference.

Sincerely yours,

Russell J. Hosler
Professor of Business
Education

RJH:aos

cc: Dr. Harry Huffman

NEW YORK STATE COLLEGE OF AGRICULTURE
A STATUTORY COLLEGE OF THE STATE UNIVERSITY
CORNELL UNIVERSITY
ITHACA, N. Y. 14850

DEPARTMENT OF EDUCATION
STONE HALL

October 26, 1967

Dr. Robert M. Reese, Director
Trade and Industrial Education Services
Ohio State University
1885 Neil Avenue
Columbus, Ohio 43210

Dear Bob:

I wish to take this opportunity to express appreciation for the invitation to participate in the National Seminar on Trade and Industrial Teacher Education. I comm end your group on the innovative practice of inviting observers from the other vocational fields.

This experience was valuable to me personally and professionaly. The opportunity to share ideas and concerns was mutually beneficial. I particularly appreciated the warmth with which I was received by the group.

As we look to the future in teacher education, I'm sure that we can profit from the exchange of programs and ideas in the various areas. Specifically, the philosophy, objectives, and actual procedures followed in teacher education in the various services will have much inter-disciplinary value.

I feel that my personal gain may have overridden any contributions I may have made. However, in my association with teacher educators in agriculture I will be better able to interpret the broad problems facing us.

Although we have differences among the fields of vocational education, our common elements are much greater. Our joint effort in this project is a good example of cooperation which is in the best interest of the profession. I hope the practice will be accepted by other services!!

Sincerely yours,

Joe P. Bail

Joe P. Bail, Chairman
Agricultural Education Division

JPB:EDR
cc: Dr. Calvin Cotrell

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